

HOW TO... Master macros

Wouldn't it be nice if your spreadsheet did all those boring, time-consuming jobs for you? Lynley Oram explains how Excel macros can automate tasks with just one click

A macro is simply a small program that undertakes a set of predetermined steps within a larger program. In an application such as Excel, where you'll often find yourself repeating the same set of actions over and over, a macro can be an indispensable time saver.

Macros in Excel are written in a programming language called Visual Basic for Applications, or VBA. If that sounds a bit scary, don't worry. Excel has a built-in macro recorder that will allow you to create a macro without ever having to even look at a line of programming code.

We'll show you how to make the most of this tool in this tutorial using Excel 2003. The macro recorder can be a bit limiting, however, so we'll explain how to create and edit macros using VBA next month.

1 With a macro you can create your own commands. Excel already has a number of built-in commands, such as Print and Save (you'll find these on the File menu), for the tasks that most people are likely to do all the time.

However, there are probably tasks that you frequently carry out within your spreadsheets, perhaps even on a daily basis. Having these tasks complete in a way that is as easy as hitting File, Print to print your file would be invaluable. Let's say you always print two copies of a particular workbook. Start by opening a workbook and selecting Tools, Macro, Record new macro.

2 Enter a name in the Macro name box. You can use letters, numbers and the underscore symbol, but it must not contain any spaces. You're limited to 64 characters. Keep the name descriptive and use the underscore symbol instead of spaces; for example, Print_2_copies.

Next, choose where the macro will be stored. By default, Excel will store it in the workbook you have open. The Personal Macro Workbook is a hidden workbook that Excel creates the first time you use this option. Thereafter, this workbook will be opened whenever you start Excel, although as it's hidden you won't see it.

Any macro stored in the Personal Macro Workbook will be available for use in all workbooks. The filename for this workbook is personal.xls. Do a search for this on your system, and make a note of its location. If you create a lot of macros, particularly complicated ones, then it makes sense to back up this file regularly.

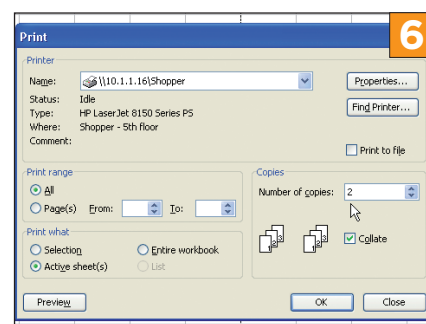
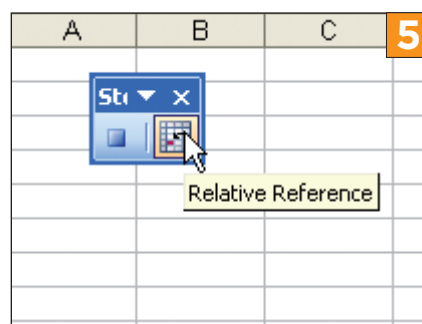
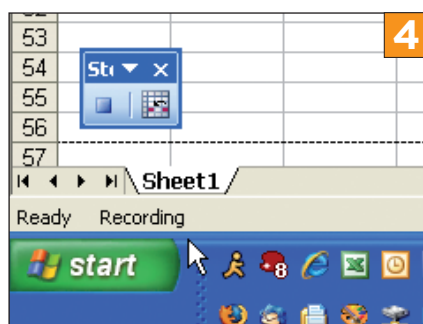
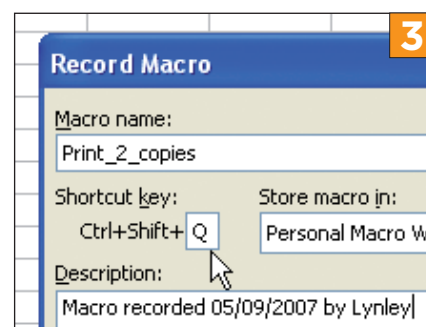
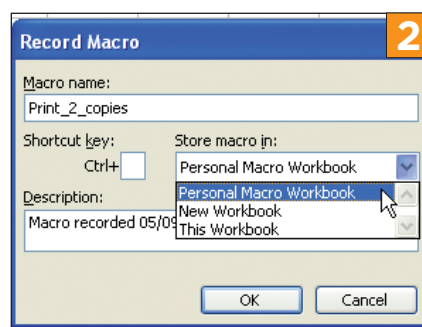
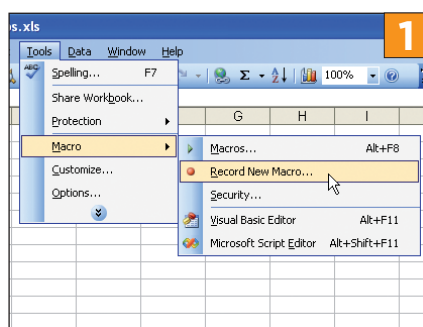
3 You can assign a shortcut key to the macro. However, be careful: a shortcut key combination in this box will automatically override any shortcut keys already in use, so if you assign Ctrl-S as the shortcut, for example, each time you press those two keys your macro will run. This could be disconcerting for users who expect that combination to save their file.

Since nearly all the Ctrl-plus-letter keys are already in use as shortcuts, we'll also add in the Shift key. Click inside the box next to Ctrl+, press

the Shift key and then press the Q key. The shortcut should now read 'Ctrl+Shift+Q'. That will be your keyboard shortcut for this macro.

4 Finally, there's the Description box. Excel automatically fills in a few details here, such as the date the macro was created and the name of the person who created it. If you haven't done so already, you can change your username by going to Tools, Options, General. This box can be edited, so remove or add details as you want. Click OK. A new toolbar will appear. If you look at the status bar at the bottom left of the screen, you'll see that it now says 'Recording'.

5 There are two buttons on the Stop Recording toolbar. The first will stop the recording; the second is the Relative Reference button. A macro can be recorded relatively or absolutely. A relative macro will start to play back from the position in which the onscreen cursor was placed before you started to run the macro. However, an absolutely recorded macro will start to run on the exact range of cells you selected when recording the macro. Say, when you began recording a macro, you were in cell A1, but when you run the macro later, cell A12 is selected. A relative macro will run from cell A12, whereas an absolute macro will work on cell A1. To record a relative macro, click on the Relative Reference button. We'll leave this for now, as this macro doesn't require a Relative Reference.



6 Click on the File menu and select Print. In the dialog box that opens, enter '2' in the number of copies box. Click on OK. Then press the Stop Recording button on the toolbar.

To check that your macro works, use the keyboard shortcut or go to Tools, Macro, Macros and select it from the list that appears.

7 It is possible to create a menu command or toolbar button that, when selected, will run your macro. Go to the Tools menu and choose Customize, or right-click on the toolbars at the top of the screen and select this option from the menu that appears. Go to the Commands tab. From the Categories list on the left, select Macros. Drag Custom Button to the toolbar to add the macro as a button. To place the macro as a command within an existing menu, drag the Custom Menu Item over to the appropriate menu. When it opens, move down the menu until you reach the desired location.

8 Don't close the Customize dialog box just yet. First, right-click on the command or button and select Assign Macro. Select the relevant macro and click OK. Right-click on the button again to change its image.

You can use the same right-click menu to change the name that appears on the menu item. Click in the box next to Name on the menu, and make your alterations.

In Excel it is possible to navigate the menus and commands by pressing the Alt key followed by the appropriate letter on the menu, then the letter for the menu command you want. For example, pressing Alt-F-P will open the File menu and select Print. To open the Print dialog box, hit the Return key. You know which letter to choose because Excel helpfully underlines it.

You can do the same with your new menu command. To indicate which letter should be underlined, precede it with an &. We're going to underline the letter P, so we've entered &Print 2 copies. Now we just need to press Alt-F-P and then P again to select our new command. When you're done, close the Customize dialog box.

9 If you've got a number of macros, it makes sense to put them all in their own menu.

To create a menu, open the Customize dialog box again, and this time select New menu from the Categories list on the Commands tab. Drag the New Menu entry that appears on the right-hand side on to the Menu bar.

You can assign macros to the new menu using the method outlined in Step 7.

10 Another way to make your macros easy to access is to link them to a graphical image inside your workbook. This method is most suited to workbooks that contain only a few macros and will be shared with a lot of people. Here we'll show you how to do this using a button, as that's the easiest to create, but you can use this method with any graphic created using the Drawing or Forms tools in Word.

Go to View, Toolbars, Forms and open the Forms toolbar. Click on Button, which is fourth from the left. Then click on your worksheet and drag to draw a button. Assign a macro and click OK. To change the name on the button, simply click inside it and replace the default text. Now click anywhere on the worksheet to deselect the button. When you move the onscreen pointer over the button, it will change shape into a hand. When it does this, click. The macro will then run.

If you want to make changes to the button at a later stage, such as changing the name or assigning a new macro, hold the Ctrl key down before clicking on it.

11 Macros have often been used by malicious virus-writers as a way to get viruses into your computer. For this reason, when you open a workbook that contains macros, you may see the warning box shown in the screenshot below. This happens because Excel is set, by default, to disable all macros of unknown origin. To run your macros you'll need to go to the Tools menu and select Macro, Security. If you select a medium security setting, Excel will prompt you to enable macros every time you open the workbook. Only select a low security setting if you are sure that

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■ If you've closed the Stop Recording toolbar, it won't automatically reappear the next time you start recording a macro. And you won't find it in the View, Toolbars menu unless you've started recording a macro. To get it back again, start to record a macro, then choose View, Toolbars, Stop Recording. Once the toolbar appears, stop the recording. You can then delete the macro.

■ To delete macros, go to Tools, Macro, Macros or press Alt-F8. Select the macro you no longer want from the list on the left and hit the Delete button.

you'll only ever open workbooks with macros whose origins you know – if you've created them yourself, for example.

12 One way to keep your security settings high but still run your macros is to assign a digital certificate to the macro. Excel will only trust macros that come with a digital certificate assigned by a formal certification authority. It's unlikely that you'll be able to convince your employer or club manager to make that sort of investment. However, self-signed certificates can still be useful. If the macro is being run on the same PC that was used to create the self-signed digital certificate, then Excel will trust it, and if your security settings are set to medium or high, you won't get the warning box.

First, you need to create your signature. Go to the Start menu, select All Programs, Microsoft Office, Microsoft Office Tools, Digital Certificate for VBA Projects. Follow the onscreen instructions. Then, with the workbook containing the macros you've already created open, go to Tools, Macro, Visual Basic Editor. From the View menu, select Project Explorer. Select the appropriate project from the list on the left. Go to Tools, Digital Signature. Click on the Choose button, select your certificate and click OK twice.

